

A2 CC Review Key Q2T1

LCD
4x

$$1) \frac{x+4}{x} + \frac{x-4}{4}$$

$$\frac{4(x+4)}{4x} + \frac{x(x-4)}{4x} = \frac{4x+16}{4x} + \frac{x^2-4x}{4x} = \frac{x^2+16}{4x} \quad \boxed{B}$$

$$2) (5x^2 - 2x + 5) - (2x^2 - 4x - 3)$$

$$5x^2 - 2x + 5 - 2x^2 + 4x + 3 = \boxed{3x^2 + 2x + 8}$$

combine like terms

$$3) \frac{\sqrt{48}}{\sqrt{3}} = \sqrt{16} = 4 \quad \textcircled{A}$$

$$4) x^3 + 27 \quad \begin{matrix} S & O & AP \\ (x+3) & (x^2 - 3x + 3^2) \end{matrix} = (x+3)(x^2 - 3x + 9) \quad \textcircled{C}$$

$$\begin{matrix} \sqrt[3]{x^3} = x \\ \sqrt[3]{27} = 3 \end{matrix}$$

$$5) 3x^2 + 7x - 20$$

$$3x^2 - 5x + 12x - 20$$

$$x(3x-5) \quad 4(3x-5)$$

$$(3x-5)(x+4) \quad \textcircled{D}$$

ac = -60	
-1	60
-2	30
-3	20
-4	15
-5	12

$$6) \begin{array}{c|c} ax - ay & -bx + by \\ a(x-y) & -b(x-y) \end{array}$$

$$\boxed{(x-y)(a-b)}$$

$$7) \frac{6}{a-5} - \frac{a+5}{(a+5)(a-5)} = \frac{6}{a-5} - \frac{1}{a-5} = \boxed{\frac{5}{a-5}} \text{ (A)}$$

$$8) \frac{2}{z-3} + \frac{4}{3-z} = \frac{2}{z-3} + \frac{-4}{z-3} = \boxed{\frac{-2}{z-3}}$$

$$\text{LCD: } (h-4)(h+4)$$

$$9) \frac{h-20}{(h-4)(h+4)} + \frac{2}{h-4}$$

$$\frac{h-20}{(h-4)(h+4)} + \frac{2(h+4)}{(h-4)(h+4)} = \frac{h-20+2h+8}{(h-4)(h+4)} = \frac{3h-12}{(h-4)(h+4)} = \frac{3(h-4)}{(h-4)(h+4)}$$

$$= \boxed{\frac{3}{h+4}}$$

$$\text{LCD: } (a+1)(a-1)$$

$$10) \frac{3a+1}{(a+1)(a-1)} - \frac{1}{a+1}$$

$$\frac{3a+1}{(a+1)(a-1)} - \frac{1(a-1)}{(a+1)(a-1)} = \frac{3a+1-a+1}{(a+1)(a-1)} = \frac{2a+2}{(a-1)(a+1)} = \frac{2(a+1)}{(a-1)(a+1)}$$

$$= \boxed{\frac{2}{a-1}}$$

$\frac{1 \text{ LCD:}}{12}$

$$11) \frac{x}{2} - \frac{x}{3} + \frac{x}{4}$$

$$\frac{6x}{12} - \frac{4x}{12} + \frac{3x}{12} = \frac{5x}{12} \boxed{C}$$

$$12) \left(1 - \frac{x}{x+2}\right) \left(\frac{x^2}{4} - 1\right)$$

$$\left(\frac{x+2}{x+2} - \frac{x}{x+2}\right) \left(\frac{x^2}{4} - \frac{4}{4}\right)$$

$$\left(\frac{2}{x+2}\right) \cdot \left(\frac{x^2-4}{4}\right) = \frac{\cancel{2}}{x+2} \cdot \frac{(x+2)(x-2)}{\cancel{4}_2} = \left(\frac{x-2}{2}\right)$$

$$13) \left(\frac{a}{b} - 1\right) \div \left(\frac{a}{b} + 1\right)$$

$\text{LCD} = b$ $\text{LCD} = b$

$$\left(\frac{a}{b} - \frac{b}{b}\right) \quad \frac{a}{b} + \frac{b}{b}$$

$$\left(\frac{a-b}{b}\right) \div \left(\frac{a+b}{b}\right)$$

$$\frac{a-b}{\cancel{b}} \cdot \frac{\cancel{b}}{a+b} = \boxed{\frac{a-b}{a+b}} \textcircled{A}$$

\swarrow switch

$$14) \left(7 - \frac{1}{r}\right) \div \left(7 + \frac{1}{r}\right)$$

LCD = r LCD = r

$$\left(\frac{7r}{r} - \frac{1}{r}\right) \div \left(\frac{7r}{r} + \frac{1}{r}\right)$$

$$\frac{7r-1}{r} \div \frac{7r+1}{r}$$

$$\frac{7r-1}{\cancel{r}} \cdot \frac{\cancel{r}}{7r+1} = \boxed{\frac{7r-1}{7r+1}}$$

$$15) \left(\frac{3}{w-x} - \frac{3}{w+x}\right) \div \left(\frac{6}{w^2-x^2}\right)$$

LCD = (w-x)(w+x)

$$\left(\frac{3(w+x)}{(w-x)(w+x)} - \frac{3(w-x)}{(w-x)(w+x)}\right)$$

$$\left(\frac{3w+3x - 3w+3x}{(w-x)(w+x)}\right)$$

$$\left(\frac{6x}{(w-x)(w+x)}\right) \div \frac{6}{(w-x)(w+x)}$$

$$\frac{\cancel{6}^x}{(w-x)(w+x)} \cdot \frac{(w-x)(w+x)}{\cancel{6}} = \boxed{x}$$